

## REMARKS

Claims 1-39 are pending in the present application. In the above amendments, claims 1, 5, 7-8, 10, 14, 18, 22, 24-25, 27, 28, 29, 30, 32, 35-36, 38, and 39 have been amended. These amendments add no new matter to the application.

In the Office Action mailed May 5, 2005, the Examiner rejected claims 1-39. Applicants respectfully respond to this Office Action.

### CLAIMS 32-34, 37 and 39

The Examiner rejected claims 32-34, 37 and 39 under 35 U.S.C. 102(e) as being anticipated by Zhang (US 6,369,758). However, Zhang does not disclose all the features of these claims. For example, the Examiner states that "Zhang discloses determining a 'spatial signature' including the amplitude and phase for each signal." However, Zhang does not disclose the angle-of-arrival (AOA) of the signal. "[T]he complex spatial signature of a signal includes the signal amplitude and the arrival (AOA) of the signal." See paragraph [1041] of the specification of the present application. Thus, Zhang does not disclose a spatial signature. Independent claims 32 (from which dependant claims 32-34 and 37 depend), 38 and 39 have been amended to include an angle of arrival to clarify this distinction. In addition, claims 1, 10, 18, and 27 have been amend to include this feature.

Furthermore, another difference between Zhang and the present method and apparatus is that the present method and apparatus discloses "an estimate of the complex covariance matrix  $R$  is made." See paragraph [1040] of the specification. Zhang does not disclose this feature. Claims 1, 10, 18, 27, 32 38, and 39 have been amended to include this feature.

Another difference between Zhang and the present method and apparatus is that the weighting factors disclosed in the present application are different than those disclosed in Zhang. In the present invention a weight factor is determined for each finger of the RAKE receiver in accordance with the following equation  $w = ((R - R_s)^{-1}) c$ . See Paragraph [0041]. Thus, a weight factor is determined using the complex covariance matrix  $R$ . Zhang does not disclose this feature. Claims 5, 14, 22, 28, and 32 have been

amended to include this feature. Thus, claims 1, 5, 10, 14, 18, 22, 27, 28, 32, 38 and 39 and their respective dependent claims are not anticipated by Zhang because Zhang does not disclose all the features of these claims.

#### CLAIM 35

The Examiner rejected claim 35 under 35 U.S.C. 103(a) as being unpatentable over Zhang (US 6,369,758) in view of Richard (US 5,901,174). With respect to claim 35, the Examiner admits that “Zhang does not disclose the signals are not combined using an optimal combiner.” The Examiner then states that “Richard discloses receiving signals . . . using an optimal combiner. This maximizes the signal to noise ratio and minimizes error signals (column 8, lines 7-10).” Applicant respectfully disagrees with the Examiner’s interpretation of Richard because the present method and apparatus teaches away from using a receiver which maximizes signal to noise ratio like the one disclosed in Richard. See paragraph [1028] of the specification, “the MRC method, does not provide the ability to reject interference signals because the weighting factors are selected to maximize the power of the desired signal, and in doing so may also increase the power of the interfering signals.” Instead, the receiver of the present method and apparatus optimizes the signal to interference ratio. “A technique to improve the array and diversity gain of a highly correlated antenna includes receiving signals from two antennas.” See paragraph [1039] of the specification. “A high array gain improves the ability of a receiver to reject interfering signals, and improves the receiver’s ability to operate in a multipath environment.” See paragraph [1037] of the specification. Thus, the combiner disclosed in Richard is not optimal with respect to the present apparatus and method. Claim 35 has been amended to clarify this point. In addition, claims 7, 24, and 29 have been amended to include this feature. Therefore, claims 7, 24, 29 and 35 are not obvious in light of the combination of Zhang and Richard.

#### CLAIM 36

The Examiner rejected claim 36 under 35 U.S.C. 103(a) as being unpatentable over Zhang (US 6,369,758) in view of Maruta et al (US 6,205,166). With respect to claim 36, the Examiner admits that “Zhang does not disclose the combiner is a maximal

ratio combiner. The Examiner then states that "Maruta discloses the channels are maximum-ratio combined in adder 8 (column 3, lines 46-50). This maximizes the desired signal amplitude and minimizes the error signals." However, as discussed above with respect to claim 35, the present method and apparatus teaches away from using a receiver which maximizes the power of the desired signal. Thus, the combiner disclosed in Maruta is not optimal with respect to the present apparatus and method. Claim 36 has been amended to clarify this point. In addition, claims 8, 25, and 30 have been amended to include this feature. Therefore, claims 8, 25, 30 and 36 are not obvious in light of the combination of Zhang and Maruta.

## REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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